

COMMENT ON THE APPLICATION CONCERNING *STERNOTHERUS*  
GRAY, 1825 AND *PELUSIOS* WAGLER, 1830. Z.N.(S.)2278  
(see vol. 37, pp. 124–128)

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The correct spelling of the generic name *Sternotherus* Gray, 1825 was recently debated by Smith, Smith & Chiszar, 1980; those authors there acknowledged the availability of the generic name *Sternotherus* Bell, 1825 and considered some consequences of the priority of that name over *Pelusios* Wagler, 1830, at present universally used. At about the same time we independently submitted the first draft of a paper on the same subject, but including wider implications. The present paper is a revised form of that draft. In it we examine those wider implications at both genus-group and family-group levels, consider several possible courses of action and their consequences, and request the Commission to choose the course that we believe will best secure stability of nomenclature. Our paper should be read in conjunction with Smith, Smith & Chiszar's application to the Commission in *Bull. zool. Nom.* vol. 37, pp. 124–128.

2. We agree with those authors' analysis of the relationship between *Sternotherus* Gray, 1825 and *Sternotherus* Bell, 1825, and take up the historical sequence of events with the work of Wagler, 1830. He did not expressly designate a type species for *Sternotherus* but restricted the genus to *S. trifasciatus* Bell. He also (p. 137) established the new genus *Pelusios* with three included nominal species: *Emys castanea* Schweigger, 1812, p. 314; *Testudo subnigra* Lacépède, 1788, p. 446; and *Sternotherus leachianus* Bell, 1825 (already designated as type species of *Sternotherus* by Bell, 1828, p. 514).

3. A junior synonym of *Pelusios* that does not appear in Wermuth & Mertens's (1977, pp. 115–116) synonymy of the generic name, is *Cheliphus* Rafinesque, 1832. This name was first introduced by Rafinesque (1815, p. 75) as a nomen nudum. Later (1832, p. 64) he gave a diagnosis of the genus but did not include any species in it:

'*Cheliphus* Raf. Water turtles with valved shells, 5 claws and toes to all the feet.'

The name seems never to have been used and no species have ever been referred to the genus. The diagnosis is, however, quite clear. The combination of characters given therein is met with in only one genus of Recent turtles, *Pelusios* Wagler (type species, by subsequent designation by Fitzinger, 1843, p. 29, *Testudo subnigra* Lacépède, 1788). Fortunately, *Pelusios* has priority over *Cheliphus*. We hereby designate *Testudo subnigra* Lacépède, 1788 as type species of *Cheliphus* Rafinesque, 1832, which thereby becomes a junior objective synonym of *Pelusios* Wagler, 1830.

4. Gray, 1831, p. 37, gave a new definition and content to *Sternotherus* (which he still credited to Bell). He did not designate a type species. He included the following two species in the genus as newly understood: *Emys castanea* Schweigger (with which he considered *Sternotherus leachianus* Bell to be synonymous) and *Testudo subnigra* Lacépède. (Smith, Smith & Chiszar, 1980, p. 126, consider *S. leachianus* to be a junior synonym of *T. subnigra*. Bell's type specimen is still extant in the collections of the Oxford University Museum (OUM 8618). We have examined it and agree with Gray that the name is a synonym of *Emys castanea* Schweigger, 1812). In 1844 Gray followed the same arrangement but added two further species to the genus.

5. In a list of genera, Swainson, 1839, p. 344, mentioned *Sternotherus* as a subgenus of *Kinosternon* Spix, 1824, p. 17. Holbrook, 1842, p. 133, used *Sternotherus* Bell with the same meaning, i.e. for the species *Testudo odorata* Latreille. Fitzinger, 1843, p. 29, was the first formally to designate *Testudo odorata* Latreille as type species of *Sternotherus* Bell, but that is invalid because subsequent to Bell's 1828 designation of *S. leachianus*. In the same work, p. 29, Fitzinger designated *Testudo subnigra* Lacépède as type species of *Pelusios* Wagler and that action is valid.

6. In 1855, p. 51, Gray at last used Bell's spelling *Sternotherus* for the genus he had since 1825 called *Sternotherus*. He mentioned Bell's 1828 type-species designation and considered *Pelusios* to be a synonym of *Sternotherus*. Smith, Smith & Chiszar overlooked this use by Gray of Bell's spelling.

7. For nearly half a century from 1855, the use of *Sternotherus* in the sense of Bell, 1828, and Gray, 1855 was almost general (see e.g. Strauch, 1862, p. 43; Boulenger, 1889, pp. 191–197) and *Pelusios* was treated as a synonym of *Sternotherus*. That stable usage was upset by Stejneger, who in 1902, p. 237, considered *Testudo odorata* as the type species of both *Sternotherus* and *Sternotherus* and synonymised both with *Kinosternon* Spix. He used *Pelusios* as the valid name for the genus that until then had been called *Sternotherus*.

8. Brown, 1908, p. 114, used *Sternotherus* sensu Stejneger (= *Sternotherus* Gray) for *Testudo odorata*, which he clearly mentioned as the type species, as a genus distinct from *Kinosternon*; Wright & Funkhouser, 1915, p. 114, used *Sternotherus* in the same sense for *Aromochelys carinata* Gray, 1855, p. 47. Stejneger, 1923, p. 1, also without explanation, separated *Sternotherus* Gray from *Kinosternon* and referred three species to it. From that date, this use of *Sternotherus* has been accepted by most authors. A few authors (Lindholm, 1929, p. 277; Tinkle, 1958, p. 5; Conant, 1958, pp. 35–39) used the spelling *Sternotherus*, which Tinkle thought was justified on etymological grounds, but this was rightly refuted by Albrecht (1967, p. 82). *Sternotherus* Gray is currently considered as the valid generic name for four species of North American turtles: see e.g. Ernst & Barbour, 1972, pp. 33–49. *Sternotherus* Brown, 1908 is a junior homonym of *Sternotherus* Bell. It is also an unjustified emendation of *Sternotherus* Gray with its own author and date, and is a junior objective synonym of that name.

9. Schmidt, 1919, pp. 401–402, 411–415, followed Stejneger's 1902 use of *Pelusios* as the valid name for *Sternotherus* Bell and referred six species to the genus. From that date—but not from 1902 on, as stated by Smith, Smith & Chiszar, 1980, p. 126—this usage has been generally accepted (see e.g. Hewitt, 1927, p. 375; FitzSimons, 1932, p. 37; Mertens, Müller & Rust, 1934, p. 64; Loveridge, 1941, p. 481; Müller & Hellmich, 1954, p. 54; Laurent, 1956, p. 31; Villiers, 1958, p. 230; Wermuth & Mertens, 1961, p. 286; Laurent, 1965, p. 1; Pritchard, 1967, p. 224; Raw, 1978, p. 287). All the species concerned are freshwater turtles with a hinged plastron. Species with this character were at first believed to be closely related, but they are now placed in the three families EMYDIDAE, PELOMEDUSIDAE and KINOSTERNIDAE.

10. In the same paper in which he established *Sternotherus*, Bell erected for it a new subfamily STERNOTHAERINA which he placed in the EMYDIDAE—a family in fact established by Gray one month earlier. Cope, 1868, p. 119, proposed STERNOTHAERIDAE as a new name without referring to Bell, but under Article 36 the name is available as of Bell, 1825. In the same paper, p. 119, Cope erected the PELOMEDUSIDAE for *Pelomedusa* Wagler, 1830, p. 136 (type species, by monotypy, *Testudo galeata* Schoepff, 1792, p. 12 = *Testudo subrufa* Lacépède, 1788,

p. 446). Gray, 1870, pp. 70, 77, independently proposed PELOMEDUSIDAE for a family containing *Sternothaerus* Bell, 1825, *Pelomedusa* Wagler, 1830 and *Dumerilia* Grandidier, 1867.

11. As was recognized later by most authors, *Sternothaerus* Bell (= *Pelusios* Wagler) and *Pelomedusa* Wagler are closely related and belong to the same subfamily. STERNOTHAERIDAE Bell, 1825 and PELOMEDUSIDAE Cope, 1868 are therefore subjective synonyms. Baur at first (1887, p. 102; 1888a, p. 420) recognized both families as valid, but later (1888b, p. 738) placed both genera in one family for which he chose the name STERNOTHAERIDAE. However, except for another paper by him (Baur, 1891, pp. 417, 420), that name does not seem to have been used subsequently, because Boulenger, 1889, p. 191, chose PELOMEDUSIDAE as the name for this family with STERNOTHAERIDAE as a synonym. This usage has been followed by all herpetologists until now (see e.g. Siebenrock, 1909, p. 554; Schmidt, 1919, p. 411; Mertens, Müller & Rust, 1934, p. 64; Loveridge, 1941, p. 465; Laurent, 1956, p. 30; Villiers, 1958, p. 222; Wermuth & Mertens, 1961, p. 284; Laurent, 1965, p. 1; Pritchard, 1967, p. 220; Raw, 1978, p. 287).

12. The family to which *Sternotherus* Gray belongs since Stejneger's 1902 paper was given the name CINOSTERNOIDAE by Agassiz, 1857, p. 346. This name was based on *Cinosternon* Wagler, 1830, p. 137, an unjustified emendation of *Kinosternon* Spix. Gray, 1869, p. 180 proposed two family-group names based on *Kinosternon*: KINOSTERNA for a 'section' (subfamily) and KINOSTERNINA for a tribe. KINOSTERNIDAE, first used as such by Baur, 1893, p. 674, is available as of Gray, 1869 (Article 36). Although CINOSTERNOIDAE (which should be corrected to CINOSTERNIDAE) has priority over KINOSTERNIDAE, the latter has replaced it since Stejneger & Barbour, 1917, p. 111 and has won general acceptance, either as a family name or a subfamily name (see e.g. Lindholm, 1929, p. 277; Mertens, Müller & Rust, 1934, p. 43; Pope, 1939, p. 34; Carr, 1952, p. 73; Schmidt, 1953, p. 87; Tinkle, 1958, p. 5; Conant, 1958, p. 35; Wermuth & Mertens, 1961, p. 8; Pritchard, 1967, p. 33; Ernst & Barbour, 1972, p. 33). It should therefore be maintained in the interests of stability of nomenclature. As *Cinosternon* Wagler is a junior objective synonym of *Kinosternon* Spix, Article 40 applies and the name should be cited as KINOSTERNIDAE Gray, 1869 (1857).

13. The rediscovery of Bell's type-species designation for *Sternothaerus* could lead to major changes in the currently accepted nomenclature of turtles. These are three in number:

- (a) *Sternothaerus* Bell should replace *Pelusios* Wagler. This might be accepted since *Sternothaerus* was in general use for almost a century, while *Pelusios* was resurrected only by Stejneger, 1902. However, *Pelusios* is now well established (from 1919 on — see paragraph 9) and this change would be considered by some authors as a threat to stability.
- (b) STERNOTHAERIDAE Bell, 1825, which does not seem to have been used as a valid name since Baur, 1891, would become the valid name for the family now universally known (see paragraph 11) as PELOMEDUSIDAE. We believe this change would be most disturbing to stability.
- (c) The co-existence of two generic names, *Sternotherus* and *Sternothaerus*, in different families would be a certain cause of confusion, especially among non-systematists.

14. We believe these consequences would disturb stability and cause confusion. Action by the Commission is therefore necessary. We see seven possible courses:

- (a) Suppression of *Sternotherus* Gray (type species, by subsequent designation by Stejneger, 1902, *Testudo odorata* Latreille). This would prevent consequence 13c, but *Pelusios* would still have to be replaced by *Sternotherus* and PELOMEDUSIDAE by STERNOTHAERIDAE. *Sternotherus* would be replaced by its junior objective synonym *Aromochelys* Gray, 1855, p. 46, given the same type species by Strauch, 1862, p. 38.
- (b) Ruling that Gray's 1825 paper is to be considered as later than Bell's 1825 paper. *Sternotherus* Gray would then be an incorrect subsequent spelling of *Sternotherus* Bell and would have no status in nomenclature. The result of this action would be as in (a), except that the family name EMYDIDAE would be credited to Bell (its true author) rather than to Gray (who merely used a manuscript name of Bell's).
- (c) Suppression of Bell's designation of *Sternotherus leachianus* Bell as type species of *Sternotherus* and its replacement by *Testudo odorata* Latreille, as requested by Smith, Smith & Chiszar. *Sternotherus* Bell would then become a junior objective synonym of *Sternotherus* Gray and consequence 13c would be avoided. The current use of *Pelusios* and of PELOMEDUSIDAE would be preserved. But STERNOTHAERIDAE Bell would replace KINOSTERNIDAE as the valid name of the family containing *Sternotherus* Gray. This consequence is not taken into account by Smith, Smith & Chiszar.
- (d) Suppression of all previous designations of type species for *Sternotherus* Bell (Bell, 1828, *S. leachianus*; Fitzinger, 1843, *T. odorata*; Stejneger, 1902, *T. odorata*) and designation of *S. trifasciatus* Bell as type species (thus ratifying Wagler's 1830 concept of the genus). *S. trifasciatus* is currently referred to *Cuora* Gray, 1855, p. 41, but has in the past (e.g. Boulenger, 1889, p. 133) been referred to *Cyclemys* Bell, 1834, p. 17. This designation would upset the stability of *Cuora*, which has been in general use for over 50 years (since Smith, M. A., 1931). A further consequence would be a change in the subfamilial nomenclature in the EMYDIDAE: STERNOTHAERINAE Bell, 1825 would replace BATAGURINAE Gray, 1869, a well-established name since McDowell, 1964. Finally, consequence 13c would not be avoided.
- (e) Conservation of both *Sternotherus* Gray and *Sternotherus* Bell, but suppression of STERNOTHAERINA Bell, 1825. This action is technically impossible, for so long as *Sternotherus* remains available and nomenclaturally valid, any zoologist has the right to recognize it as the type genus of a family-group taxon. Moreover, none of the consequences spelt out in paragraph 13 would be avoided, because, as a result of Baur's first reviser action (1888b, p. 738), STERNOTHAERIDAE Cope, 1868 would still have precedence over PELOMEDUSIDAE Cope, 1868.
- (f) As (e), but suppressing either STERNOTHAERIDAE Cope, 1868 as well, or Baur's first reviser action so as to make PELOMEDUSIDAE Cope, 1868 nomenclaturally valid. This would be technically

impossible for the same reason as that given in (e) and consequences 13a and 13c would not be avoided.

- (g) Suppression of *Sternothaerus* Bell, 1825. STERNOTHAERINA Bell, 1825 and all family-group names based on the generic name would automatically become nomenclaturally invalid. All the consequences envisaged in paragraph 13 would be avoided. *Sternotherus* Gray, 1825 (KINOSTERNIDAE) and *Pelusios* Wagler, 1830 would remain valid names as currently used and PELOMEDUSIDAE Cope, 1868 would be conserved. We believe this action would avoid the introduction of sources of confusion and would preserve stability of nomenclature.

15. We accordingly ask the International Commission on Zoological Nomenclature

- (a) to use its plenary powers to suppress the generic name *Sternothaerus* Bell, 1825 for the purposes of the Law of Priority but not for those of the Law of Homonymy;
- (b) to place on the Official List of Generic Names in Zoology
- (i) *Sternotherus* Gray, 1825 (gender: masculine), type species, by subsequent designation by Stejneger, 1902, *Testudo odorata* Latreille, 1801;
- (ii) *Pelusios* Wagler, 1830 (gender: masculine), type species, by subsequent designation by Fitzinger, 1843, *Testudo subnigra* Lacépède, 1788;
- (iii) *Pelomedusa* Wagler, 1830 (gender: feminine), type species, by monotypy, *Testudo galeata* Schoepff, 1792;
- (iv) *Kinosternon* Spix, 1824 (gender: neuter), type species, by subsequent designation by Bell, 1828, *Kinosternon longicaudatum* Spix, 1824;
- (c) to place on the Official List of Specific Names in Zoology
- (i) *odorata* Latreille, 1801, as published in the binomen *Testudo odorata* (specific name of type species of *Sternotherus* Gray, 1825);
- (ii) *subnigra* Lacépède, 1788, as published in the binomen *Testudo subnigra* (specific name of type species of *Pelusios* Wagler, 1830);
- (iii) *galeata* Schoepff, 1792, as published in the binomen *Testudo galeata* (specific name of type species of *Pelomedusa* Wagler, 1830);
- (iv) *longicaudatum* Spix, 1824 as published in the binomen *Kinosternon longicaudatum* (specific name of type species of *Kinosternon* Spix, 1824);
- (d) to place on the Official List of Family-Group Names in Zoology
- (i) PELOMEDUSIDAE Cope, 1868 (type genus *Pelomedusa* Wagler, 1830);
- (ii) KINOSTERNIDAE Gray, 1869 (1857) (type genus *Kinosternon* Spix, 1824);
- (e) to place on the Official Index of Rejected and Invalid Generic Names in Zoology
- (i) *Sternothaerus* Bell, 1825, as suppressed under the plenary powers in (a) above;
- (ii) *Sternothaerus* Brown, 1908, a junior homonym of *Sternothaerus* Bell, 1825;
- (f) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology STERNOTHAERINA Bell, 1825 (type genus *Sternothaerus* Bell, 1825, suppressed under the plenary powers in (a) above).

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**GNATHODUS PANDER, 1856 (CONODONTA): NOTIFICATION OF A NEW PROPOSAL THAT *POLYGNATHUS BILINEATUS* ROUNDY, 1926 BE THE TYPE SPECIES OF THAT GENUS. Z.N.(S.) 2279**

(see vol. 36, pp. 57–62, 201–202; vol. 37, p. 67; vol. 39, pp. 7–13)

By the Secretary, International Commission on Zoological Nomenclature

As will be seen from the above list of references to the *Bulletin*, this case has aroused intense interest and widespread discussion. The basic issue remains: it is whether, in the interests of stability of nomenclature, the plenary powers should be used to designate a Lower Carboniferous species as type species of *Gnathodus* Pander, 1856; or whether Pander's originally monotypic type species, which is agreed to be inadequately figured and described, and of which the type material is lost, should be allowed to stand.